

## AMENDMENTS TO THE CLAIMS

This listing of claim will replace all prior versions and listings of claims in the application.

1. (currently amended) A method for communicating, comprising ~~the steps of:~~  
obtaining a first local address for a destination entity and a first global address ~~for associated~~  
with said destination entity, said destination entity is on a private network that uses said first local  
address to communicate with said destination entity;

creating a message that includes encapsulation within a single protocol level, said message  
includes said first local address as a first destination address and said first global address as a second  
destination address; and

communicating said message toward said destination.

2. (currently amended) A method according to claim 1, wherein:  
said ~~step of~~ obtaining said first local address and said first global address is based on a  
domain name.

3. (original) A method according to claim 1, wherein:  
said message includes a first IP packet, a second IP packet encapsulated in said first IP packet  
and a third IP packet encapsulated in said second IP packet.

4. (canceled)

5. (currently amended) A method ~~for communicating, comprising: according to claim 3,~~  
~~wherein:~~  
obtaining a first local address for a destination and a first global address for said destination;  
creating a message that includes encapsulation within a single protocol level, said message  
includes said first local address and said first global address, said message includes a first IP packet,  
a second IP packet encapsulated in said first IP packet and a third IP packet encapsulated in said

second IP packet, said first IP packet includes said first global address as a first destination address and a second local address as a first source address, said second local address corresponds to a source entity[[]], said second IP packet includes said first global address as a second destination address and a second global address as a second source address, said second global address corresponds to said source entity[[]; and], said third IP packet includes said first local address as a third destination address and said second global address as a third source address[[]]; and communicating said message toward said destination;

6. (original) A method according to claim 5, further comprising the steps of:  
receiving said message at a first intermediate entity;  
removing said first IP packet from said message;  
forwarding said message, after said step of removing said first IP packet, toward said destination;  
receiving said message at a second intermediate entity;  
removing said second IP packet from said message; and  
forwarding said message, after said step of removing said second IP packet, toward said destination.

7. (original) A method according to claim 1, wherein:  
said message includes a first IP packet, a second IP packet encapsulated in said first IP packet, a third IP packet encapsulated in said second IP packet and a fourth IP packet encapsulated in said third IP packet.

8. (currently amended) A method according to claim 7, wherein:  
said first IP packet includes said first global address as a ~~first~~ destination address and a second local address as a ~~first~~ source address, said second local address corresponds to a source entity;

said second IP packet includes said first global address as a ~~second~~ destination address and a second global address as a ~~second~~ source address, said second global address corresponds to said source entity;

said third IP packet includes said first local address as a ~~third~~ destination address and said second global address as a ~~third~~ source address; and

said fourth IP packet includes a pseudo address.

9. (original) A method according to claim 1, further comprising the steps of:  
receiving said message at an intermediate entity;  
removing a layer of encapsulation from said message; and  
forwarding said message, after said step of removing, toward said destination.

10. (original) A method according to claim 9, further comprising the steps of:  
receiving said message at said destination;  
removing a layer of encapsulation from said message;  
accessing information in said message after said step of removing.

11. (original) A method according to claim 10, further comprising the steps of:  
providing a pseudo address to an application in said destination based on said message.

12. (original) A method according to claim 1, further comprising the steps of:  
creating a pseudo address for said destination; and  
adding said pseudo address to said message.

13. (currently amended) A method for communicating, comprising: ~~the steps of:~~  
receiving a message, said message includes encapsulation within a single protocol level, said message stores a first global address and a first local address as a destination address associated with a first entity, said first local address and said first global address correspond to a first entity, said first

entity is on a private network, said first entity is reachable from outside the private network using said first local address and said first global address;

removing at least one level of encapsulation from said message; and  
accessing a remaining level of encapsulation.

14. (original) A method according to claim 13, wherein:  
said message includes multiple levels of encapsulation after said step of removing; and  
said step of accessing includes communicating said message toward said first entity using said first global address, said message includes said first local address and said first global address.

15. (original) A method according to claim 13, wherein:  
said message is an IP packet.

16. (currently amended) A method according to claim 15, wherein:  
prior to said step of removing, said message includes a first packet, a second packet encapsulated in said first packet, a third packet encapsulated in said second packet and a fourth packet encapsulated in said third packet;

said first packet includes said first global address as a first destination and a second local address as a first source address, said second local address corresponds to a source entity;

said second packet includes said first global address as a second destination and a second global address as a second source address, said second global address corresponds to said source entity;

said third packet includes said first local address as a third destination; and  
said fourth packet includes a pseudo address.

17. (currently amended) A method according to claim 15, wherein:

prior to said step of removing, said message includes a first packet, a second packet encapsulated in said first packet, a third packet encapsulated in said second packet and a fourth packet encapsulated in said third packet;

said first packet includes said first global address as a first destination and a second local address as a first source address, said second local address corresponds to a source entity;

said second packet includes said first global address as a second destination and a second global address as a second source address, said second global address corresponds to said source entity; and

said third packet includes said first local address as a third destination address.

18. (original) A method according to claim 13, further including the steps of:

preparing a response, said response includes said first local address, a second local address and a second global address, said second global address and said second local address correspond to a source entity, said message is created by said source entity, said response includes a set of encapsulated IP packets; and

sending said response toward said source entity.

19. (original) A method according to claim 13, wherein:

said step of accessing includes communicating said message toward said first entity using said first local address, said message includes said first local address and said first global address.

20 (original) A method according to claim 13, wherein:

said message includes a pseudo address; and

said step of accessing includes accessing said pseudo address.

21. (original) A method according to claim 13, further comprising the steps of:

identifying a pseudo address based on said message; and

providing said pseudo address to an application at said destination.

22. (original) A method according to claim 13, further comprising the steps of:  
identifying a pseudo address based on said remaining level of encapsulation; and  
providing said pseudo address to an application at said destination.

23. (currently amended) A method for communicating, comprising: ~~the steps of:~~  
using a domain name to obtain a first local address for a destination entity and a first global  
address ~~for~~ associated with said destination entity, said destination entity is on a private network that  
uses said first local address to communicate with said destination entity;

creating a message that includes said first local address as a first destination address, said  
first global address as a second destination address and a first pseudo address; and

communicating said message toward said destination based on said first local address and  
said first global address.

24. (currently amended) A method according to claim 23, further comprising the step  
of:[:]]

receiving said first pseudo address from an application, said application uses said first pseudo  
address to address said destination, said step of receiving is performed prior to said step of creating a  
message.

25. (original) A method according to claim 24, further comprising the step of:  
receiving a second pseudo address, said step of creating a message includes adding said  
second pseudo address to said message, said destination uses said second pseudo address to reference  
a source, said step of communicating is performed by said source.

26. (original) A method according to claim 25, further comprising the steps of:  
receiving said message at said destination;

accessing said second pseudo address at said destination; and  
using said second pseudo address with an application on said destination.

27. (original) A method according to claim 23, further comprising the step of:  
receiving said first pseudo address, said destination uses said first pseudo address to reference  
a source, said step of communicating is performed by said source.

28. (original) A method according to claim 27, further comprising the steps of:  
receiving said message at said destination;  
accessing said first pseudo address at said destination; and  
using said first pseudo address with an application on said destination.

29. (original) A method according to claim 23, wherein:  
said message includes encapsulation within a single protocol level.

30. (original) A method according to claim 29, further comprising the steps of:  
receiving said message at an intermediate entity, said first pseudo address is stored in an inner  
layer of said encapsulation;  
removing an outer layer of said encapsulation at said intermediate entity without changing  
said inner layer of said encapsulation; and  
forwarding said message toward said destination.

31. (original) A method according to claim 30, further comprising the steps of:  
receiving said message at said destination;  
removing another layer of said encapsulation at said destination;  
accessing said first pseudo address at said destination; and  
using said first pseudo address with an application on said destination.

32. (currently amended) A method for communicating, comprising ~~the steps of~~:  
receiving a message at a destination, said message includes a local address and a global address corresponding to said local address, said destination is on a private network, said message is received from outside said private network based on a combination of said global address and said local address;

accessing a pseudo address corresponding to said local address and said global address; and  
using said pseudo address with an application.

33. (original) A method according to claim 32, wherein:  
said destination uses said pseudo address to refer to a source.

34. (original) A method according to claim 32, wherein:  
said destination uses said pseudo address to refer to said destination.

35 (original) A method according to claim 32, wherein:  
said message includes encapsulation within a single protocol level.

36. (original) A method according to claim 35, further comprising the steps of:  
removing a layer of encapsulation at said destination; and  
accessing said pseudo address in a remaining layer of said encapsulation.

37. (original) A method according to claim 35, further comprising the steps of:  
removing a layer of encapsulation at said destination; and  
accessing said pseudo address based on a remaining layer of said encapsulation.

38. (currently amended) One or more processor readable storage devices having  
processor readable code embodied on said processor readable storage devices, said processor



readable code for programming one or more processors to perform a method comprising: ~~the steps of:~~

obtaining a first local address for a destination entity and a first global address ~~for associated~~ with said destination entity, said destination entity is on a private network that uses said first local address to communicate with said destination entity;

creating a message that includes encapsulation within a single protocol level, said message includes said first local address as a first destination address and said first global address as a second destination address; and

communicating said message toward said destination.

39. (original) One or more processor readable storage devices according to claim 38, wherein:

said step of obtaining is based on a domain name.

40. (original) One or more processor readable storage devices according to claim 38, wherein:

said message includes a first IP packet, a second IP packet encapsulated in said first IP packet and a third IP packet encapsulated in said second IP packet.

41. (canceled)

42. (currently amended) One or more processor readable storage devices having processor readable code embodied on said processor readable storage devices, said processor readable code for programming one or more processors to perform a method comprising: ~~the steps of~~ ~~according to claim 38, wherein:~~

obtaining a first local address for a destination and a first global address for said destination;

creating a message that includes encapsulation within a single protocol level, said message includes said first local address and said first global address, said message includes a first IP packet,

said message includes a second IP packet encapsulated in said first IP packet, said message includes a third IP packet encapsulated in said second IP packet, said message includes and a fourth IP packet encapsulated in said third IP packet[[:]], said first IP packet includes said first global address as a first destination address and ~~said a~~ second local address as a first source address, said second local address corresponds to ~~said a~~ source entity[[:]], said second IP packet includes said first global address as a second destination address and a second global address as a second source address, said second global address corresponds to said source entity[[:]], said third IP packet includes said first local address as a third destination address and said second global address as a third source address[[:]; and]], said fourth IP packet includes a pseudo address[[:]; and  
communicating said message toward said destination.

43. (original) One or more processor readable storage devices according to claim 38, further comprising the steps of:

creating a pseudo address for said destination; and  
adding said pseudo address to said message.

44. (currently amended) One or more processor readable storage devices having processor readable code embodied on said processor readable storage devices, said processor readable code for programming one or more processors to perform a method comprising: ~~the steps of:~~

receiving a message, said message includes encapsulation within a single protocol level, said message stores a first global address and a first local address as a destination address associated with a first entity, said first local address and said first global address correspond to a first entity, said first entity is on a private network, said first entity is reachable from outside the private network by a combination of the first local address and the first global address;

removing at least one level of encapsulation from said message; and  
accessing a remaining level of encapsulation.

45. (original) One or more processor readable storage devices according to claim 44, wherein:

said message includes multiple levels of encapsulation after said step of removing;

said step of accessing includes communicating said message toward said first entity using said first global address, said message includes said first local address and said first global address; and

said message is an IP packet.

46. (original) One or more processor readable storage devices according to claim 44, wherein:

prior to said step of removing, said message includes a first packet, a second packet encapsulated in said first packet, a third packet encapsulated in said second packet and a fourth packet encapsulated in said third packet;

said first packet includes said first global address as a first destination and a second local address as a first source, said second local address corresponds to a source entity;

said second packet includes said first global address as a second destination and a second global address as a second source, said second global address corresponds to said source entity; and

said third packet includes said first local address as a third destination.

47. (original) One or more processor readable storage devices according to claim 44, wherein said method further comprises the steps of:

identifying a pseudo address based on said message; and

providing said pseudo address to an application at said destination.

48. (currently amended) One or more processor readable storage devices having processor readable code embodied on said processor readable storage devices, said processor readable code for programming one or more processors to perform a method comprising: ~~the steps of~~

using a domain name to obtain a first local address for a destination entity and a first global address ~~for~~ associated with said destination entity, said destination entity is on a private network that uses said first local address to communicate with said destination entity;

creating a message that includes said first local address as a first destination address, said first global address as a second destination address and a first pseudo address; and

communicating said message toward said destination based on said first local address and said first global address.

49. (original) One or more processor readable storage devices according to claim 48, wherein said method further comprises the steps of:

receiving said first pseudo address from an application, said application uses said first pseudo address to address said destination, said step of receiving is performed prior to said step of creating a message.

50. (original) One or more processor readable storage devices according to claim 48, wherein:

said message includes encapsulation within a single protocol level.

51. (currently amended) One or more processor readable storage devices having processor readable code embodied on said processor readable storage devices, said processor readable code for programming one or more processors to perform a method comprising: ~~the steps of~~

receiving a message at a destination, said message includes a local address and a global address corresponding to said local address, said destination is on a private network, said message is received from outside the private network based on said global address and said local address;

accessing a pseudo address corresponding to said local address and said global address; and using said pseudo address with an application.

52 (original) One or more processor readable storage devices according to claim 51, wherein:

said message includes encapsulation within a single protocol level.

53. (original) One or more processor readable storage devices according to claim 51, wherein said method further comprises the steps of:

removing a layer of encapsulation at said destination; and

accessing said pseudo address based on a remaining layer of said encapsulation.

54. (currently amended) An apparatus, comprising:

a communication interface;

a memory device; and

one or more processor, said one or more processors programmed to perform a method comprising: ~~the steps of:~~

obtaining a first local address for a destination entity and a first global address ~~for associated with~~ said destination entity, said destination entity is on a private network that uses said first local address to communicate with said destination entity,

creating a message that includes encapsulation within a single protocol level, said message includes said first local address as a first destination address and said first global address as a second destination address, and

communicating said message toward said destination.

55. (original) An apparatus according to claim 54, wherein:

said step of obtaining is based on a domain name.

56. (original) An apparatus according to claim 54, wherein:

said message includes a first IP packet, a second IP packet encapsulated in said first IP packet and a third IP packet encapsulated in said second IP packet.

57. (original) An apparatus according to claim 56, wherein:  
said first IP packet includes said first global address as a first destination address;  
said second IP packet includes said first global address as a second destination address; and  
said third IP packet includes said first local address as a third destination address.

58. (original) An apparatus according to claim 54, wherein:  
said message includes a first IP packet, a second IP packet encapsulated in said first IP packet, a third IP packet encapsulated in said second IP packet and a fourth IP packet encapsulated in said third IP packet;  
said first IP packet includes said first global address as a first destination address and a second local address as a first source address, said second local address corresponds to a source entity;  
said second IP packet includes said first global address as a second destination address and a second global address as a second source address, said second global address corresponds to said source entity;  
said third IP packet includes said first local address as a third destination address and said second global address as a third source address; and  
said fourth IP packet includes a pseudo address.

59. (original) An apparatus according to claim 54, further comprising the steps of:  
creating a pseudo address for said destination; and  
adding said pseudo address to said message.

60. (currently amended) An apparatus, comprising:  
a communication interface;  
a memory device; and  
one or more processor, said one or more processors programmed to perform a method comprising: ~~the steps of:~~

receiving a message, said message includes encapsulation within a single protocol level, said message stores a first global address and a first local address, ~~said first local address and said first global address~~ correspond to a first entity, said first entity is on a private network, said first entity is reachable from outside the private network by a combination of the first local address and the first global address;

removing at least one level of encapsulation from said message, and  
accessing a remaining level of encapsulation.

61. (original) An apparatus according to claim 60, wherein:  
said message includes multiple levels of encapsulation after said step of removing;  
said step of accessing includes communicating said message toward said first entity using said first global address, said message includes said first local address and said first global address;  
and  
said message is an IP packet.

62. (original) An apparatus according to claim 60, wherein:  
prior to said step of removing, said message includes a first packet, a second packet encapsulated in said first packet, a third packet encapsulated in said second packet and a fourth packet encapsulated in said third packet;  
said first packet includes said first global address as a first destination and a second local address as a first source, said second local address corresponds to a source entity;  
said second packet includes said first global address as a second destination and a second global address as a second source, said second global address corresponds to said source entity; and  
said third packet includes said first local address as a third destination.

63. (original) An apparatus according to claim 60, wherein said method further comprises the steps of:  
identifying a pseudo address based on said message; and

providing said pseudo address to an application at said destination.

64. (currently amended) An apparatus, comprising:

a communication interface;

a memory device; and

one or more processor, said one or more processors programmed to perform a method comprising ~~the steps of~~:

using a domain name to obtain a first local address for a destination entity and a first global address associated with ~~for~~ said destination entity, said destination entity is on a private network that uses said first local address to communicate with said destination entity,

creating a message that includes said first local address as a first destination address, said first global address as a second destination address and a first pseudo address, and

communicating said message toward said destination based on said first local address and said first global address.

65. (original) An apparatus according to claim 64, wherein said method further comprises the steps of:

receiving said first pseudo address from an application, said application uses said first pseudo address to address said destination, said step of receiving is performed prior to said step of creating a message.

66. (original) An apparatus according to claim 64, wherein:  
said message includes encapsulation within a single protocol level.

67. (currently amended) An apparatus, comprising:

a communication interface;

a memory device; and



one or more processor, said one or more processors programmed to perform a method comprising: ~~the steps of:~~

receiving a message at a destination, said message includes a local address and a global address corresponding to said local address, said destination is on a private network, said message is received from outside the private network based on said global address and said local address,

accessing a pseudo address corresponding to said local address and said global address, and

using said pseudo address with an application.

68. (original) An apparatus according to claim 67, wherein:  
said message includes encapsulation within a single protocol level.

69. (original) An apparatus according to claim 67, wherein said method further comprises the steps of:

removing a layer of encapsulation at said destination; and  
accessing said pseudo address based on a remaining layer of said encapsulation.

70. (new) A method according to claim 1, wherein:  
said message includes a first IP packet, a second IP packet encapsulated in said first IP packet and a third IP packet encapsulated in said second IP packet;  
said first IP packet includes said first global address and a second local address, said second local address corresponds to a source;  
said second IP packet includes said first global address and a second global address; and  
said third IP packet includes said first local address and a second global address, said first local address corresponds to said destination.